

AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions and listings of claims in the application.

Listing of Claims

1. (Currently Amended) ~~An active-chlorine-containing~~ A solid unit containing a chlorine source and a source of dye, the solid unit comprising:
 - (a) about 1 to 90 wt% of a source of chlorine; and about 10 to about 200 parts by weight of the source of chlorine per each part of dye; ~~and~~
 - (b) a source of dye, the dye comprising a particulate dye having a ~~minimum~~ particle size ~~of~~ greater than about 200 microns; the dye, when reacted with the source of chlorine, changing ~~or depleting~~ its color over a ~~predetermined~~ time of 15 minutes to 24 hours when the pH is in the range of about 3 to about 7; and
 - (c) a source of acid to maintain the pH in the range of about 3 to about 7wherein the solid unit comprises a major dimension greater than about 2 millimeters and a weight greater than about 2 grams, the solid unit substantially free of an amount of free water sufficient to act as a reaction medium between the chlorine source and the dye.
2. (Currently Amended) The solid unit of claim 1 wherein the dye comprises a dye ~~with a minimum~~ having a particle size ~~of~~ greater than about 500 microns and a density less than 0.9 gram-cm^{-3} .
3. (Currently Amended) The solid unit of claim 1 ~~wherein the solid unit comprises~~ configured as a cylindrical tablet having a diameter of about 4 to 75 millimeters and a thickness of about 1 to 25 millimeters.

4. (Previously Presented) The solid unit of claim 1, wherein the chlorine source comprises an alkali metal dichloroisocyanurate dehydrate.
5. (Currently Amended) The solid unit of claim 1 ~~wherein the solid unit comprises~~ configured as a spheroid having a major dimension of about 5 to 60 millimeters and one perpendicular dimension of about 1 to 50 millimeters.
6. (Currently Amended) The solid unit of claim 4, wherein the chlorine source comprises an encapsulated ~~alkaline~~ alkali metal dichloroisocyanurate dehydrate.
7. (Original) The solid unit of claim 1 wherein the dye comprises a granular dye having a particle size greater than about 600 microns and a density less than about 0.85 grams-cm⁻³.
8. (Currently Amended) A method of using the solid unit of claim 1 in a cleaning ~~or sanitizing operations~~ operation, the method ~~comprises~~ comprising the steps of:
 - (a) placing a solid unit, comprising an active chlorine source and a dye, in a volume of an aqueous liquid in a container, the weight ratio of the solid to the aqueous solution being about 0.1 to 20 grams per liter of water to form a dye colored, active-chlorine solution;
 - (b) contacting ware with the aqueous active-chlorine solution during cleaning ~~or sanitizing~~ operations for a period of up to 4 hours; and
 - (c) ~~after~~ detecting a color change indicative of a need for additional chlorine ; ~~either replacing the aqueous solution or replenishing the aqueous solution with additional chlorine source.~~
9. (Currently Amended) A particulate composition for forming an aqueous solution having an active chlorine source and a dye, the particulate composition comprising:

(a) about 1 to 90 wt% of an encapsulated source of chlorine; ~~and~~

(b) an effective chlorine indicating amount of dye; and

(c) a source of acid;

wherein the concentrate has substantially no free water, has an extended shelf life ~~or~~ of greater than one month and when added to an aqueous diluent provides a dye that indicates the presence of an active chlorine concentration for a ~~predetermined~~ time of 15 minutes to 24 hours when the pH is in the range of about 3 to about 7.

10. (Cancelled).

11. (Previously Presented) The composition of claim 9, wherein the source of chlorine comprises chloroisocyanurate compound.

12. (Cancelled).

13. (Previously Presented) The composition of claim 9, wherein the dye comprises FD&C dye No. 40.

14. (Previously Presented) The composition of claim 9, wherein the dye comprises FD&C dye No. 3.

15. (Currently Amended) The composition of claim ~~12-9~~ wherein the acid source comprises a solid acid.

16. (Currently Amended) The composition of claim ~~12-9~~, wherein the acid ~~comprises~~ is selected from the group consisting of sodium dihydrogen phosphate, sodium hydrogen tartrate, sodium hydrogen sulfate, ~~or~~ and mixtures thereof.

17. (Currently Amended) The composition of claim 9, further comprising a builder, wherein the builder ~~comprises~~ is selected from the group consisting of sodium sulfate, sodium carbonate, trisodium phosphate, sodium bicarbonate, ~~or~~ and mixtures thereof.

18. (Currently Amended) The composition of claim 9 wherein the concentration of dye in the concentrate is adjusted such that the dye color changes ~~or is depleted during a useful predetermined period of time during which the sanitizer~~ when the solution can be used for its intended purpose and maintain at least drops below about 50 ppm active chlorine.

19. (Currently Amended) An aqueous liquid cleaning or sanitizing composition containing a dye that indicates chlorine concentration, the liquid comprising a major proportion of an aqueous diluent, and

(a) a source of acid;

(b) an effective amount of a dye to obtain a colored solution for a ~~predetermined time period of time of~~ about 15 minutes to 24 hours when the pH is in the range of about 3 to about 7;

(c) an effective cleaning or sanitizing amount of a chlorine ~~bleach~~ source;

wherein the aqueous composition has a pH of less than 7 and the dye color is depleted or changes before the concentration of chlorine ~~is depleted~~ drops to less than 50 ppm ~~from~~ of the composition.

20. (Cancelled).

21. (Previously Presented) The composition of claim 19, wherein the source of chlorine comprises a chloroisocyanurate compound.

22. (Original) The composition of claim 19 which also comprises a builder salt.

23. (Previously Presented) The composition of claim 19, wherein the dye comprises FD&C dye No. 40.

24. (Currently Amended) The composition of claim ~~21~~ 19 wherein the chlorine source comprises an encapsulated alkali metal dichloroisocyanurate dihydrate.
25. (Original) The composition of claim 19 wherein the acid source comprises a solid acid.
26. (Currently Amended) The composition of claim 19, wherein the acid ~~comprises~~ is selected from the group consisting of sodium dihydrogen phosphate, sodium hydrogen tartrate, sodium hydrogen sulfate, ~~or~~ and mixtures thereof.
27. (Currently Amended) The composition of claim 22, wherein the builder salt ~~comprises~~ is selected from the group consisting of sodium sulfate, sodium carbonate, trisodium phosphate, sodium bicarbonate or mixtures thereof.
28. (Cancelled).
29. (Currently Amended) A method of cleaning ~~or sanitizing~~ hard surfaces comprising:
- (a) contacting the hard surface with an aqueous solution comprising the composition of claim 9;
 - (b) forming a surface having the aqueous liquid comprising a halogen source; and
 - ~~(b)~~ (c) removing the aqueous liquid halogen source.
30. (Withdrawn) A method of hand washing ware in a sink having two or more basins, using a dye in an aqueous oxidative chlorine based cleaner or sanitizer composition, the method comprising:
- (a) contacting ware with an aqueous detergent in a first basin to remove soil, producing cleaned ware; and

(b) contacting the cleaned ware in a subsequent basin with an aqueous sanitizer solution comprising an effective amount of a chlorine source and a chlorine indicating dye, the dye, when reacted with the active source of chlorine, changing or depleting its color and being sufficiently stable in the aqueous solution to maintain at least some detectable color in the sanitizing solution after greater than 90% of the oxidizing species have been consumed.

31. (Withdrawn) The method of claim 30 wherein the chlorine source comprises an alkali metal hypochlorite.

32. (Withdrawn) The method of claim 31, wherein the hypochlorite comprises sodium hypochlorite.

33. (Withdrawn) The method of claim 30 wherein the chlorine source comprises a chlorinated isocyanurate compound which generates hypochlorous acid at the pH.

34. (Withdrawn) The method of claim 30 wherein the cleaned ware is contacted with a potable water rinse to form a rinsed cleaned ware prior to contacting the rinsed cleaned ware with the sanitizing solution.

35. (Withdrawn) The method of claim 30 wherein the aqueous sanitizer solution has a pH of less than about 7, the pH selected such that the concentration of OCl^{-1} is maintained and the concentration of HOCl is maintained.

36. (Withdrawn) The method of claim 34 wherein the cleaned ware is contacted with the aqueous rinse for approximately 1 to about 30 seconds and the rinsed cleaned ware is contacted with the aqueous sanitizing solution for about 1 to 30 seconds.

37. (Withdrawn) The method of claim 30 wherein the ware is contacted with mechanical action in the first basin with the aqueous detergent for sufficient amount of

time to substantially remove food soil and the cleaned ware is contacted with the aqueous sanitizer solution for about 1 to about 30 seconds.

38. (Withdrawn) The method of claim 30 wherein the concentration of the chlorine source is about 1 to 100 parts per million in the solution.

39. (Withdrawn) The method of claim 30, wherein the dye comprises FD&C Dye #40.

40. (Withdrawn) The method of claim 30, wherein the dye comprises FD&C Dye #3.

41. (Withdrawn) The method of claim 30 wherein after the sanitizing step, the ware is permitted to dry without contact with mechanical action or an aqueous solution.

42. (Withdrawn) The method of claim 30 wherein the sanitizing solution is made by diluting a powdered solid comprising:

(a) about 1 to 90 wt% of an encapsulated chlorine source;

(b) about 0.01 to 1.0 wt% of a dye;

(c) about 0.5 to 20 wt% of an acid source; and

(d) a major portion of a builder salt.

43. (Withdrawn) The method of claim 42 wherein the encapsulated chlorine source comprises an encapsulated chloroisocyanurate compound.

44. (Withdrawn) The method of claim 42, wherein the encapsulated chlorine source comprises a particle of the chlorine source, an inorganic layer, and an organic layer.

45. (Withdrawn) The method of claim 42 wherein the dye comprises FD&C dye No. 40.

46. (Withdrawn) The method of claim 42, wherein the acid comprises potassium dihydrogen phosphate, sodium hydrogen tartrate, or mixtures thereof.

47. (Withdrawn) The method of claim 42 wherein the builder salt comprises sodium sulfate.

48. (Withdrawn) The method of claim 42 wherein the pH of the aqueous sanitizer solution is adjusted to a pH less than 7 and to a pH at which greater than about 80% of the oxidative species is in the form of HOCl and less than about 20% of the oxidative species is in the form of OCl^- .

49. (Withdrawn) The method of claim 42 wherein the dye color is maintained in the aqueous sanitizing solution for a period of time of about 3 to 6 hours.

50. (Currently Amended) A sanitizing solution useful in sanitizing a surface, the solution comprising:

(a) about 1 to 90 wt.% of a source of an encapsulated active chlorine source resulting in at least 100 ppm active chlorine ~~a major proportion of an aqueous medium having a pH less than 7;~~

(b) an effective amount of a dye to obtain a colored solution for a period of time of about 15 minutes to 24 hours when the pH is in the range of about 3 to about 7 ~~about 1 to 90 wt.% of a source of an encapsulated active chlorine source resulting in at least 100 ppm active chlorine;~~

(c) a solid diluent or extender salt ~~an effective amount of a dye to obtain a colored solution for a predetermined period of time of 15 minutes to 24 hours; and~~

(d) water, the solution having a pH less than 7 ~~a solid diluent or extender salt.~~

51. (Currently Amended) The composition of claim 50, wherein the composition additionally comprises an acid salt ~~and the acid salt comprises~~ selected from the group consisting of sodium acid phosphate, sodium acid tartrate, or ~~and~~ mixtures thereof.

52. (Withdrawn) The method of claim 30, further comprising, after the color of the dye has been depleted, replacing the aqueous sanitizer solution in the subsequent basin.
53. (Currently Amended) The ~~active-chlorine-containing~~ solid unit of claim 1, wherein the solid unit comprises a uniform mixture of the source of chlorine and the source of dye.
54. (Previously Presented) The particulate composition of claim 9, wherein the particulate composition comprises a uniform mixture of the encapsulated source of chlorine and the dye.
55. (New) The solid unit of claim 1, wherein the solid unit is used as a hard surface cleaner.
56. (New) The solid unit of claim 1, wherein the solid unit is used as a warewashing detergent.
57. (New) The composition of claim 9, wherein the composition is used as a hard surface cleaner.
58. (New) The composition of claim 9, wherein the composition is used as a warewashing detergent.
59. (New) The composition of claim 19, wherein the composition is used as a hard surface cleaner.
60. (New) The composition of claim 19, wherein the composition is used as a warewashing detergent.
61. (New) The solution of claim 50, wherein the solution is used as a hard surface cleaner.

62. (New) The solution of claim 50, wherein the solution is used as a warewashing detergent.